

CLAIMS

1. A mutant barnase gene having one or some mutations at least in part of the DNA sequence of barnase gene, wherein said mutant barnase gene is capable, when anther-specifically expressed in a plant, of making said plant substantially male sterile without exerting any substantially disadvantageous effect on the tissues except for the anthers.
2. The gene as claimed in Claim 1, wherein said mutation is a mutation causing frame shift re-coding.
3. A gene which is derived from a DNA sequence encoding the same amino acid sequence as shown in SEQ ID NO:1 by substitution, deletion, insertion or addition of one to several nucleotides in said DNA sequence, wherein said gene is capable of encoding a protein which makes a plant substantially male sterile when expressed anther-specifically in said plant.
4. A gene comprising a DNA sequence which is derived from a DNA sequence encoding the same amino acid sequence as shown in SEQ ID NO:1 by substitution, deletion, insertion or addition of one to several nucleotides in the latter DNA sequence, and a promoter located upstream of said DNA sequence for allowing an anther-specific expression, wherein said gene is capable of making a plant substantially male sterile when introduced into the genome of said plant.
5. A gene represented by SEQ ID NO:3 which encodes a protein capable of making a plant substantially male sterile when expressed anther-specifically in said plant.

6. A gene comprising the sequence represented by SEQ ID NO:3 and a promoter located upstream of said sequence for allowing an anther-specific expression, wherein said gene is capable of making a plant substantially male sterile when introduced into the genome of said plant.
7. A recombinant vector which contains a gene as claimed in any of Claims 1 to 6 and expresses said gene in a host plant.
8. A method of making a plant male sterile which comprises transforming said plant by a mutant barnase gene as claimed in any of Claims 1 to 6 and allowing said mutant barnase gene to be expressed anther-specifically.
9. The method as claimed in Claim 8, wherein said plant is transformed by said mutant barnase gene by integrating said gene into the genome of said plant.
10. A transgenic plant wherein a gene as claimed in any of Claims 1 to 6 has been introduced.

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